SILICON OPTIC BASED WAVELENGTH DIVISION MULTIPLEXING DEVICE

ABSTRACT OF THE DISCLOSURE

The present invention discloses an optic based wavelength division multiplexer device made by a micro lithography and etching process, utilizing the special crystal lattice structure of a silicon wafer. The device comprises a silicon substrate with grooves, an input fiber optic of incoming port with its front lens, a fiber optic of pass port with its front lens, a fiber optic of reflect port with its front lens, and a thin-film filter. The fiber optics, lenses, and the thin-film filter are inserted into grooves to complete the fiber-to-fiber alignment and coupling. The present invention provides both functions of wavelength multiplexing and wavelength demultiplexing. The present invention also has the characteristics of automatic alignment and passive alignment.